NOAA GREAT LAKES

Improving NOAA's service to the Nation through collaboration

NOAA and the GLRI:
Summary Presentations of all current NOAA projects

January 22, 2020

For additional information contact:

Rebecca Held Knoche (rebecca.held@noaa.gov)

Great Lakes RESTORATION

Focus Area 4: Habitats and Species

- 2 Objectives:
  - Protect and restore communities of native species (NOAA)
  - Increase resiliency of species

Objective 4.1 – Protect and Restore Communities of Native Species

Objective

4.1. Protect and restore communities of native aquatic and terrestrial species important to the Great Lakes.

Commitment

- Identify habitats that support important Great Lakes species and take actions to restore, protect, enhance, and/or provide connectivity for these habitats.

Measures of Progress

- 4.1.1.* Acres of coastal wetland, nearshore, and other habitats restored, protected, or enhanced.
- 4.1.2.* Miles of connectivity established for aquatic species.

Habitat and Species Projects

Project	Presenter
Habitat Restoration through NOAA's Restoration Center - Restoring Habitat for Fisheries Beyond AOCs	Terry Heatlie, NMFS Restoration Center
Sustainable nearshore management solutions to prevent critical habitat loss at Illinois Beach State Park	Brandon Krumwiede, NOS OCM
Monitoring and Restoration of Lake Superior Coastal Wetlands Manoomin (Wild Rice)	Heather Stirratt, NOS OCM
Great Lakes States Shoreline Assessment	Heather Stirratt, NOS OCM
Collaborative management of emerging littoral issues in Wisconsin waters of Lake Superior	Brandon Krumwiede, NOS OCM
Environmental Sensitivity Data Update for High Spill Risk Areas	Nicolle Rutherford, NOS OR&R

NOAA GREAT LAKES

Improving NOAA's service to the Nation through collaboration

Sustainable nearshore management solutions to prevent critical habitat loss at Illinois Beach State Park

Brandon Krumwiede

NOAA GLRI Webinar

January 22, 2020

Great Lakes RESTORATION

Project Introduction

Project Lead: Heather Stirratt (NOAA OCM)

Co-PIs: Brandon Krumwiede

Funding Amount: $585,000 (Phase I FY18), Phase II FY20 awaiting award

GLRI Focus Area: 4 – Habitat and Species

GLRI Objective: Habitat Protection and Restoration

Measures of Progress: Miles of shoreline restored

Partners: Multi-Agency (IL Coastal Management Program, IL State Geological Survey, Stantec, Woolpert, U.S. Army Corps of Engineers, NOAA GLERL)

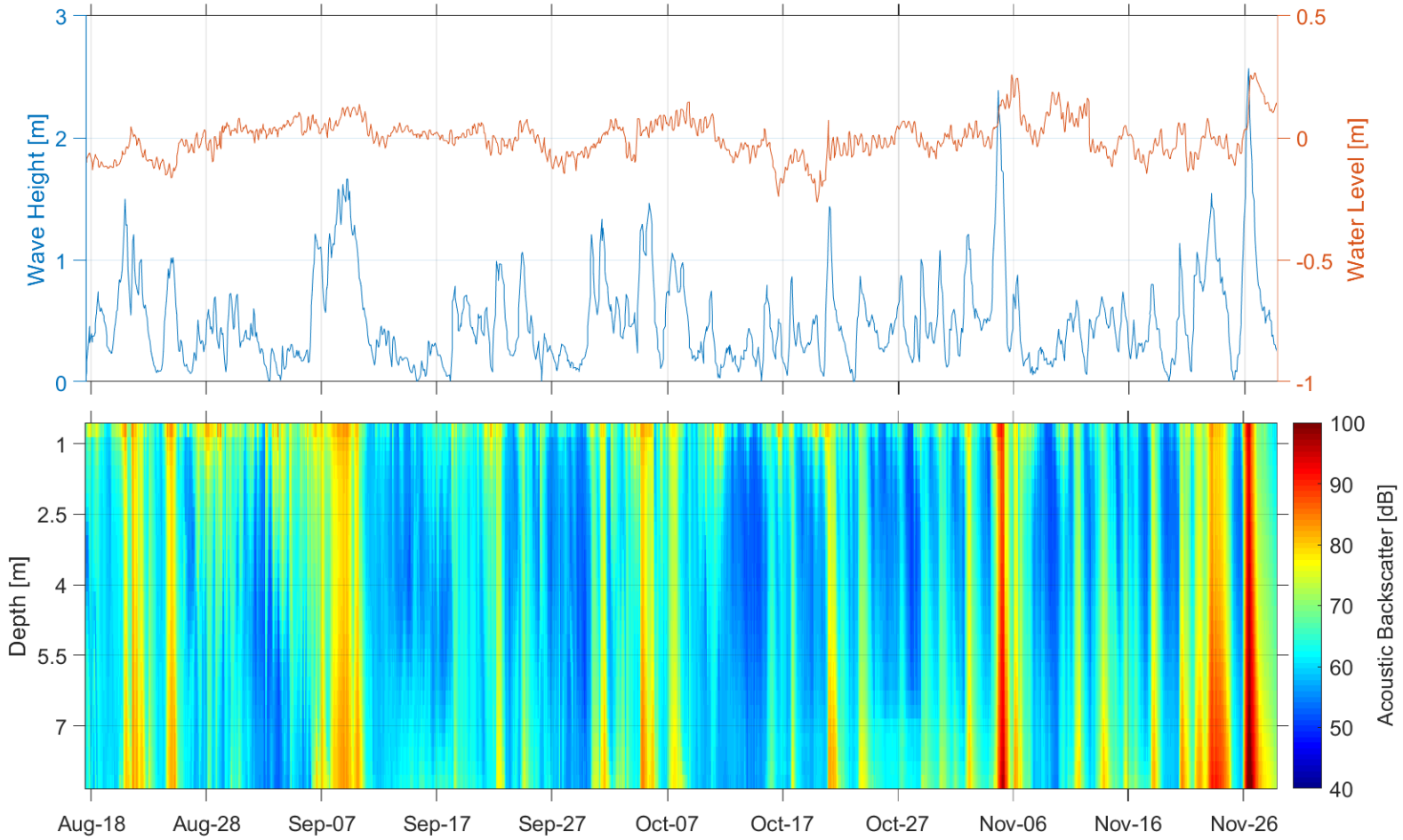
Project Description

Phase I. NOAA along with multi-agency partners deployed offshore current and sediment transport monitoring instrumentation (ADCP) to understand littoral fluxes. ISGS performed initial beach morphology analysis using LiDAR data, carbon dating, repeat aerial imagery collection and detailed beach topographic surveys at specific locations selected for beach nourishment. Beach response to the nourishment was tracked using aerial photography and high-resolution GPS surveys. (Completed)

Phase II. NOAA alongside of our partners in IL will refine the sediment budget for the area and compile high resolution datasets to constrain the physical setting and temporal processes, enabling a better understanding of contextual coastal processes that drive this system. At least one pilot project will be implemented at a critical location at IBSP. This project lays the foundations for basin scale sediment management planning and understanding of Lake Michigan's nearshore physical processes. (In Progress)

This project will work towards long term resilience strategies aimed at mitigating coastal erosion of critically unique coastal habitats and protection of shoreline sites vulnerable to lake level changes and coastal storms.

Project Description



ADCP measured backscatter intensity, wave height and water level during deployment period in 2018 at Illinois Beach State Park. Of interest is the early and late November storm events identified by the increased acoustic backscatter and associated increase in wave height.

Improving NOAA's service to the Nation through collaboration

Monitoring and Restoration of Lake Superior Coastal Wetlands Manoomin (Wild Rice)

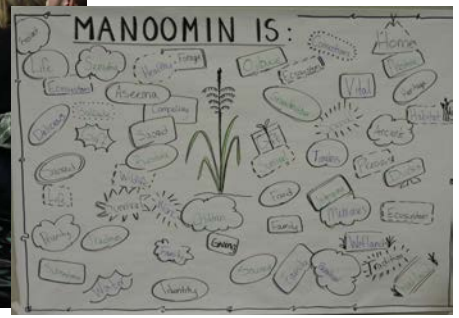
Heather Stirratt, NOAA OCM

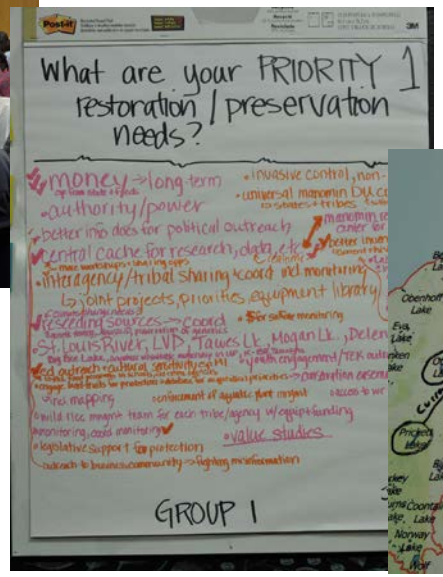
NOAA GLRI Webinar

January 22, 2020

Project Introduction: Workshop 1

(Bad River, WI)





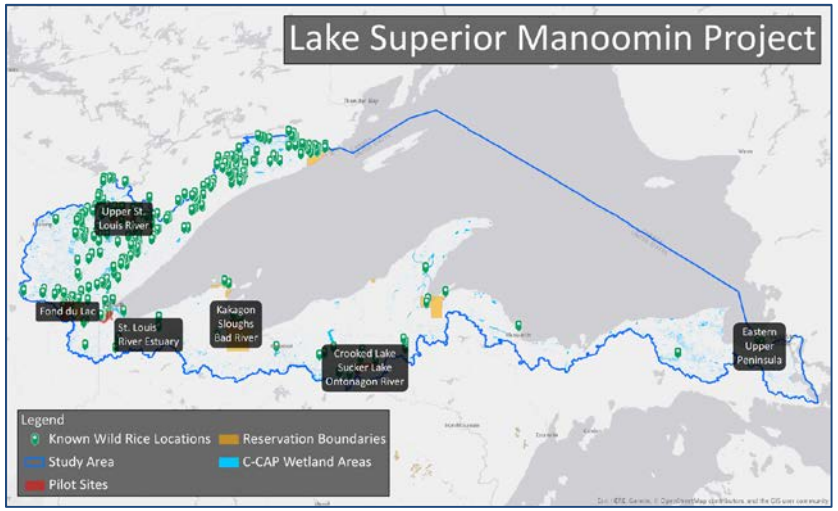
- Needs Identified:
  - Restoration and Reseeding Needs
  - Geospatial and Monitoring Needs
  - Ecosystem Services and Valuation Needs
  - Education and Outreach Needs
  - Value in Annual Gatherings

Project Introduction: Workshop 2

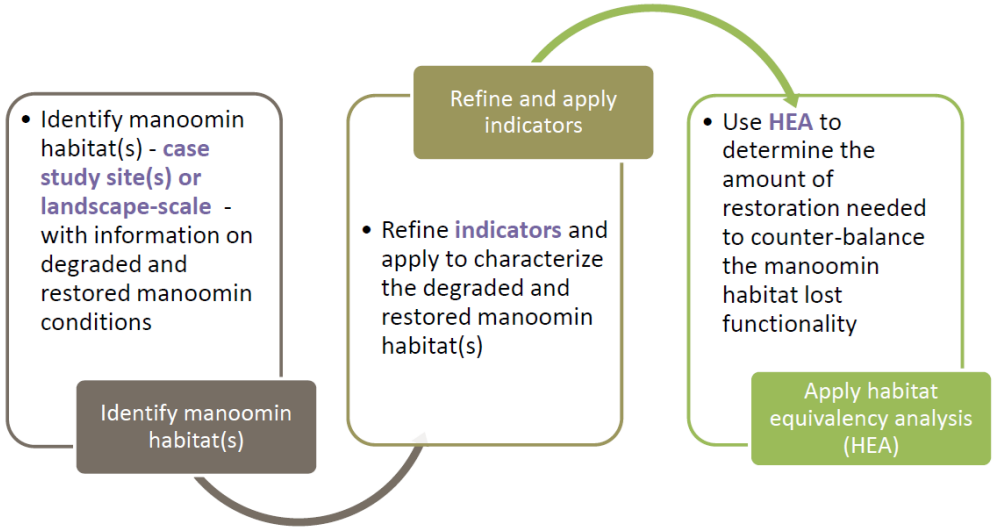
(Fond du Lac, MN)

Project Description

Geospatial and Remote Sensing Capacity Building



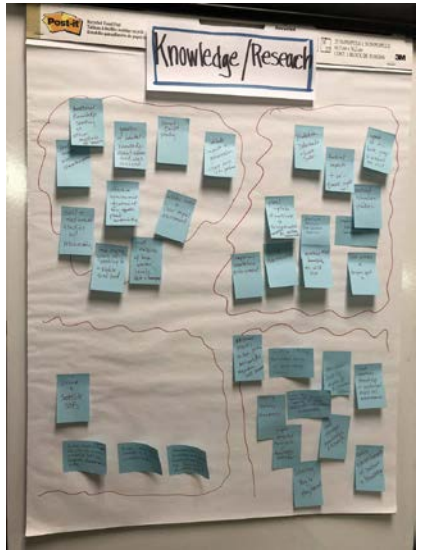
Ecosystem Services Assessment

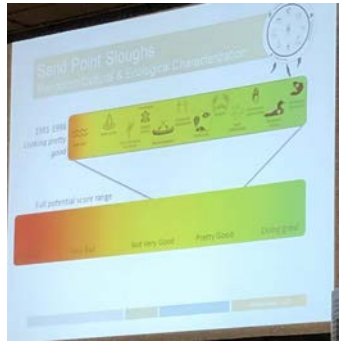


Education and Outreach

Project Introduction: Workshop 3

(Keweenaw Bay Indian Community, MI)





Next Steps

- Finalize Workshop 3 Proceedings
- Engage with Lakes Michigan and Huron Tribes on Manoomin restoration needs - FY19 GLRI Award
- Identify Joint Projects in FY20
- Host or co-host workshops in FY21 and FY22
- Final reports/deliverables available in FY22

Miigwech!

Thank you!

NOAA GREAT LAKES

Improving NOAA's service to the Nation through collaboration

Great Lakes States Shoreline Assessment

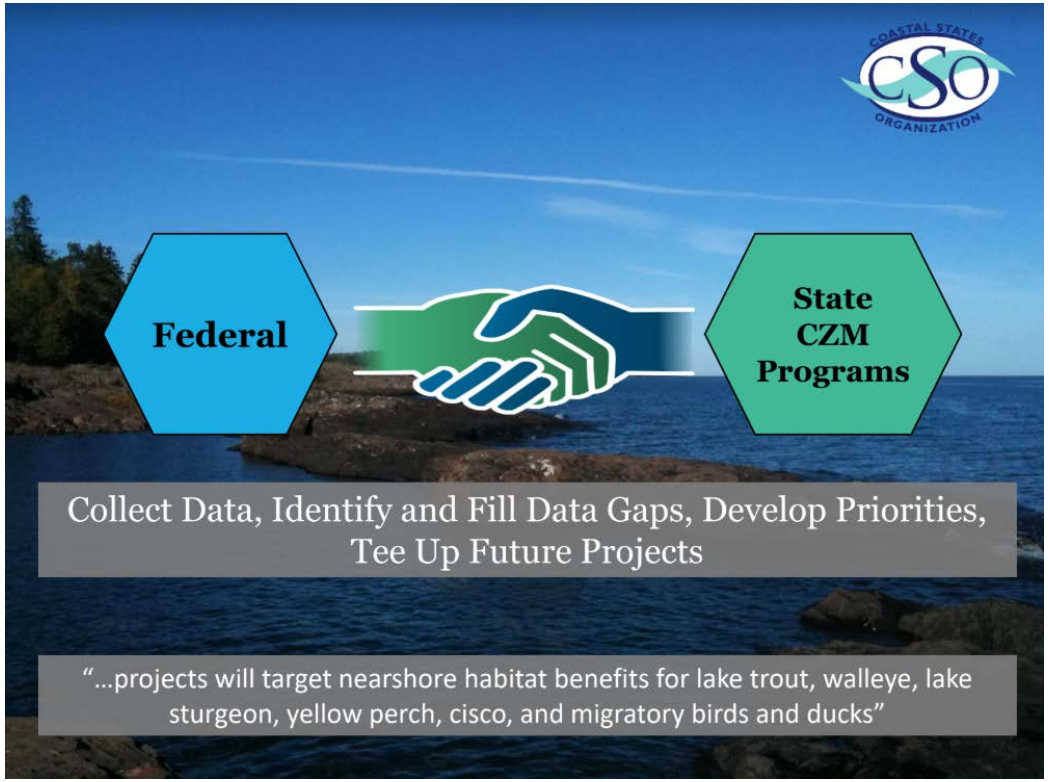
Heather Stirratt, NOAA OCM

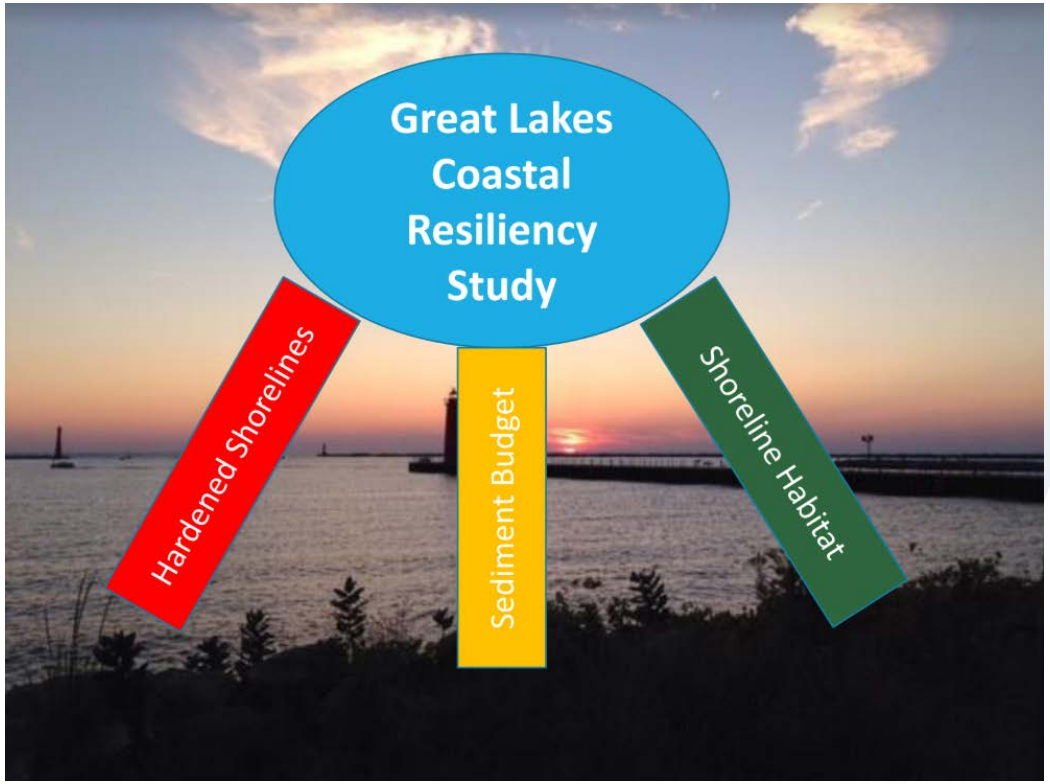
NOAA GLRI Webinar

January 22, 2020

Great Lakes RESTORATION

Project Introduction





Project Description

Milestones and Deliverables	Anticipated completion date (by quarter, i.e. FY19 Q4)
Workshop Contract award	Q4 2019
State Workshops/Meetings (x8)	Q1 2020
Draft Workshop Proceedings and Engagement Methodology, with recommendations for data collection and restoration project design and construction plans, by state (x8)	Q3 2020
Final Workshop Proceedings and Engagement Methodology, by state (x8)	Q4 2020
Data Collection, if necessary	Q1 2021
Data Collection Report, per recommendations and only if necessary	Q4 2021

Project Description

FY19/Year 1 Task Outcomes	Date
Monthly project team calls	May 2019 – April 2020
Project team RFP discussion	July 2019
Develop Project Scope and Contractor RFP	July 2019
Release Contract RFP	July 15, 2019
Workshop Contract award	September 2019
Pre-Workshop Webinars – (x2) record	Sept / Oct 2019
State Workshops/Meetings (x8) – one per state	October 2019 – February 2020
Draft Workshop Proceedings and Engagement Methodology, recommendations for data collection and restoration project design and construction plans, by state (x8)	March 2020
Final Workshop Proceedings and Engagement Methodology, by state (x8)	April 2020

Great Lakes Shoreline Habitat Project

State Workshop Host Form

Please complete and submit to mmolnar@coastalstates.org by C.O.B. July 3, 2019

Coastal Program: _____

	Name	Email
Point of Contact for Workshops		

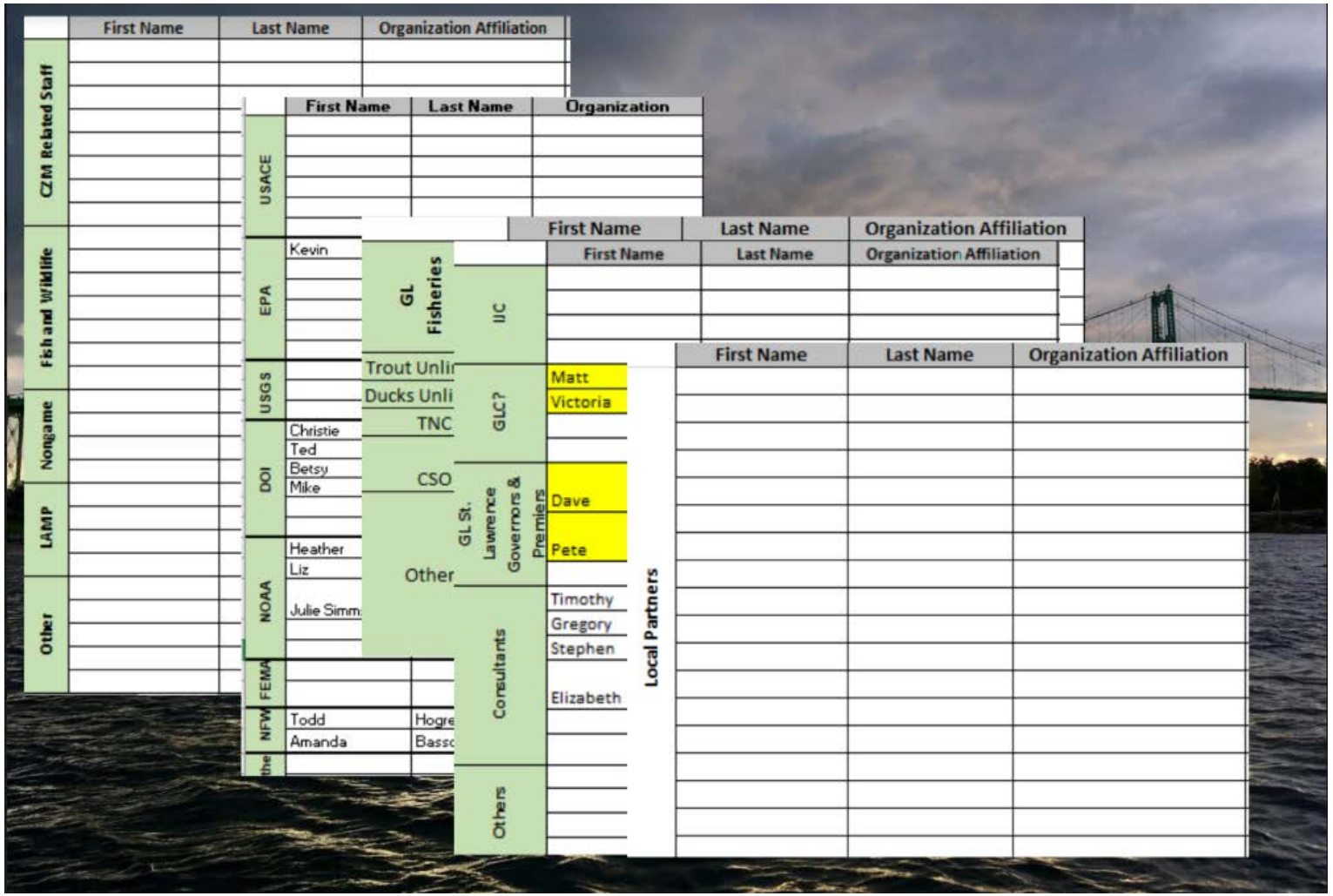
Meeting Location Options - Please identify ideas for meeting location (note: free meeting space that can accommodate 30-60 participants)

Location Option 1:	
Location Option 2:	
Location Option 3:	

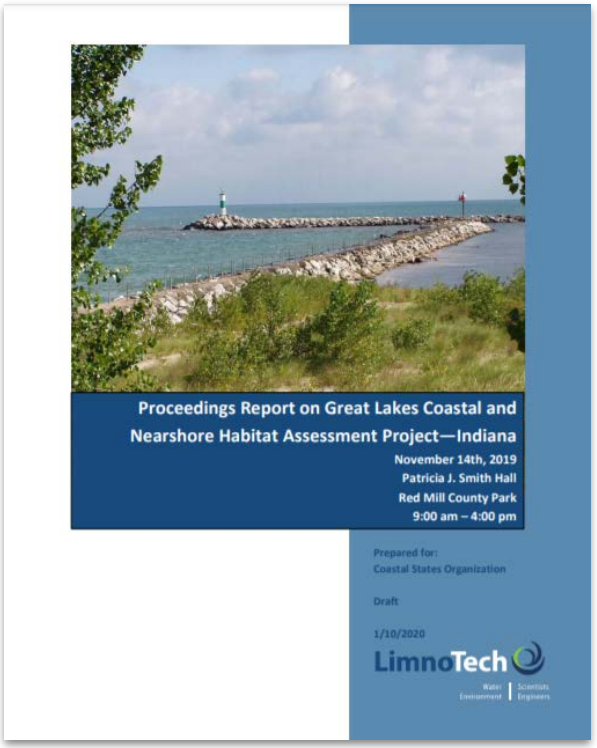
Workshop Time - Please Identify your Top 3 Preferred Time Periods for workshop in your state.

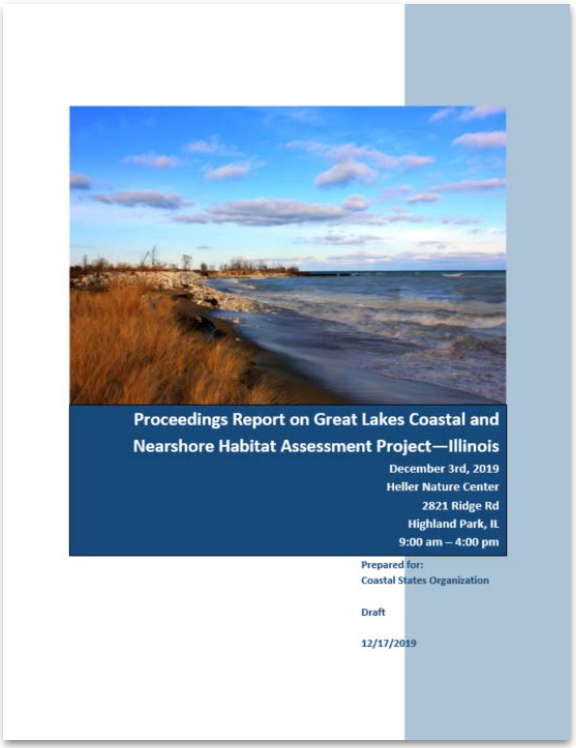
Time Period	Preference
October – 2nd Two Weeks	
November – 1st Two Weeks	
November – 2nd Two Weeks	
December – 1st Two Weeks	
January – 1st Two Weeks	
January – 2nd Two Weeks	
February – 1st Two Weeks	

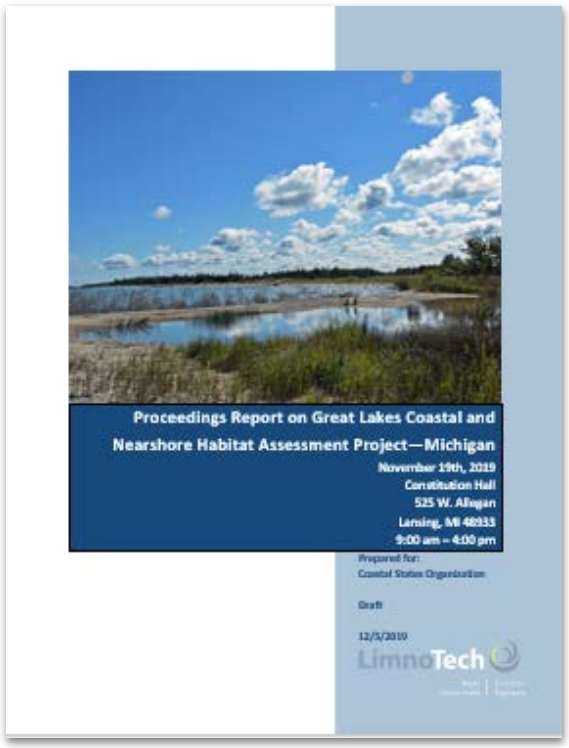
Project Description

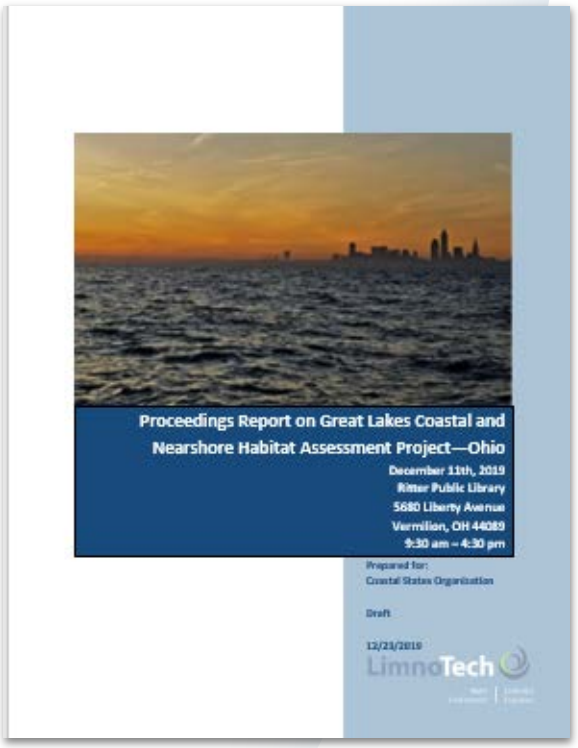


Project Description









PROJECT TEAM CHEER: "1, 2, 3, 4 - Way to go Team, we are halfway there!"

Next Steps

- Finish remaining workshops by end of Feb 2020
- Finalize all proceedings
- Crosswalk all workshop proceedings - common state needs and data gaps
- Fill highest priority data gaps - $300K (FY18)
- Coordinate across funding agencies re: future projects
- NOAA OCM E&D in FY20 - $280K

NOAA GREAT LAKES

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Collaborative management of emerging littoral issues in Wisconsin waters of Lake Superior

Brandon Krumwiede

NOAA GLRI Webinar

January 22, 2020

Great Lakes RESTORATION

Project Introduction

Project Lead: Heather Stirratt (NOAA OCM)

Co-PIs: Brandon Krumwiede

Funding Amount: $500,000 (FY19-)

GLRI Focus Area: 4 – Habitat and Species

GLRI Objective: Habitat Protection and Restoration

Measures of Progress: Miles of shoreline restored

Partners: Multi-Agency (National Park Service, NOAA GLERL, NOAA NCCOS, NOAA NMS, State of Wisconsin)

Project Description

NOAA, in partnership with NPS and Wisconsin State offices, are organizing a collaborative benthic mapping effort to address significant littoral management issues that have emerged in the Wisconsin waters of Lake Superior:

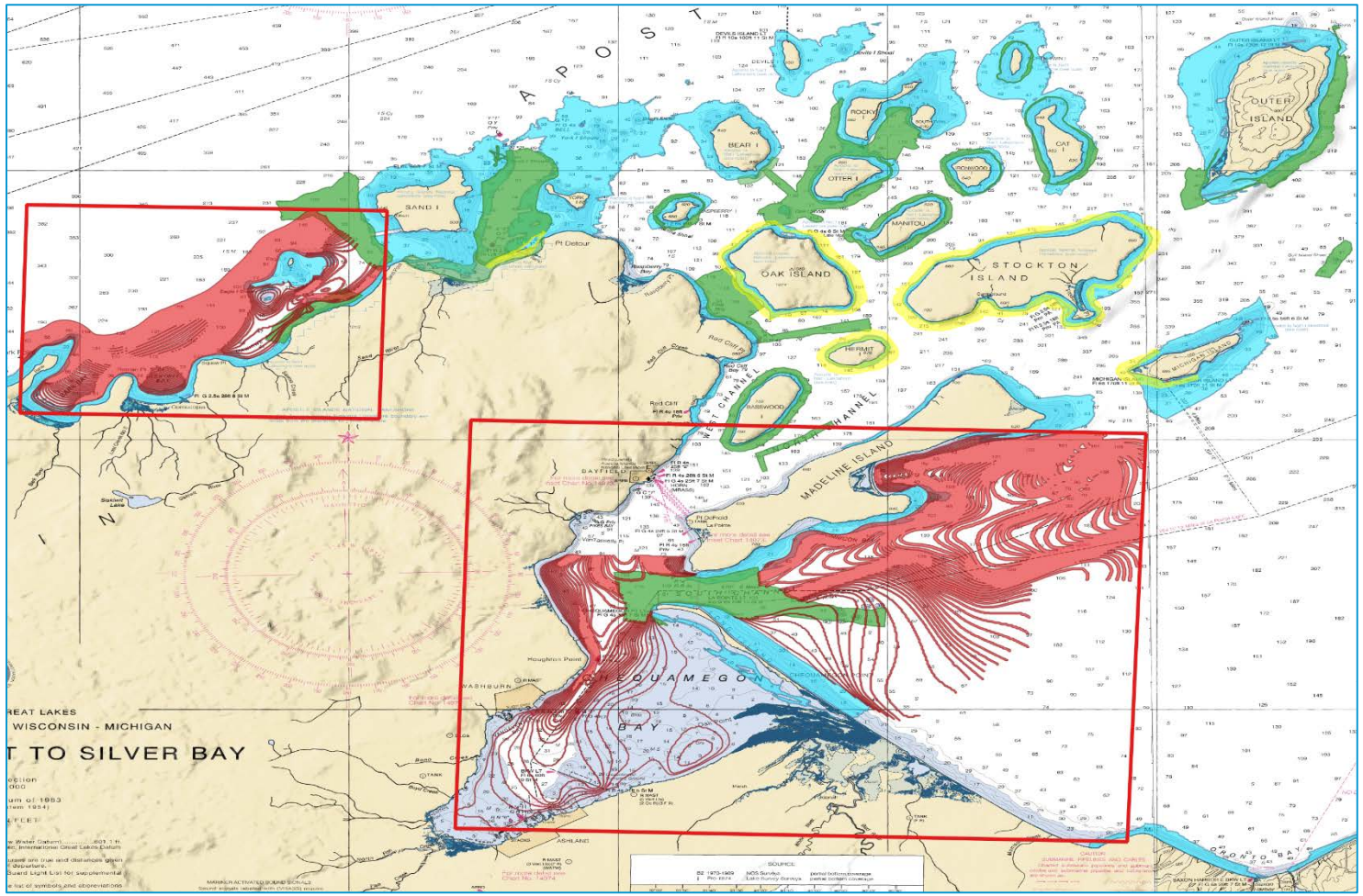
- Increases in coastal erosion
- Sedimentation and degradation of native fish habitat
- Watershed development and water quality changes
- Algal blooms
- Species invasions

This project will result in the collection and processing of multibeam sonar depth and backscatter data for the development of high resolution bathymetry and benthic mapping utilizing the Coastal and Marine Ecological Classification Standard (CMECS) to classify substrate and biotic components.

Mapping activities will addresses critical gaps in current knowledge and management applications. Subsequent modeling activities could be used to identify and protect shoreline sites vulnerable to lake level changes and coastal erosion.

Approximately 820 - 847 linear survey miles will be completed to fill in data gaps located around the Apostle Islands in near and offshore areas.

Project Description



Apostle Islands overview map showing priority areas for bathymetry and benthic mapping. Exact extents of mapping has yet to be fully determined based on how much area can be collected during the summer 2020 multibeam hydrographic survey cruise by the R/V Echo.

Improving NOAA's service to the Nation through collaboration

Environmental Sensitivity Data Update for High Spill Risk Areas

Nicolle Rutherford

NOAA GLRI Webinar

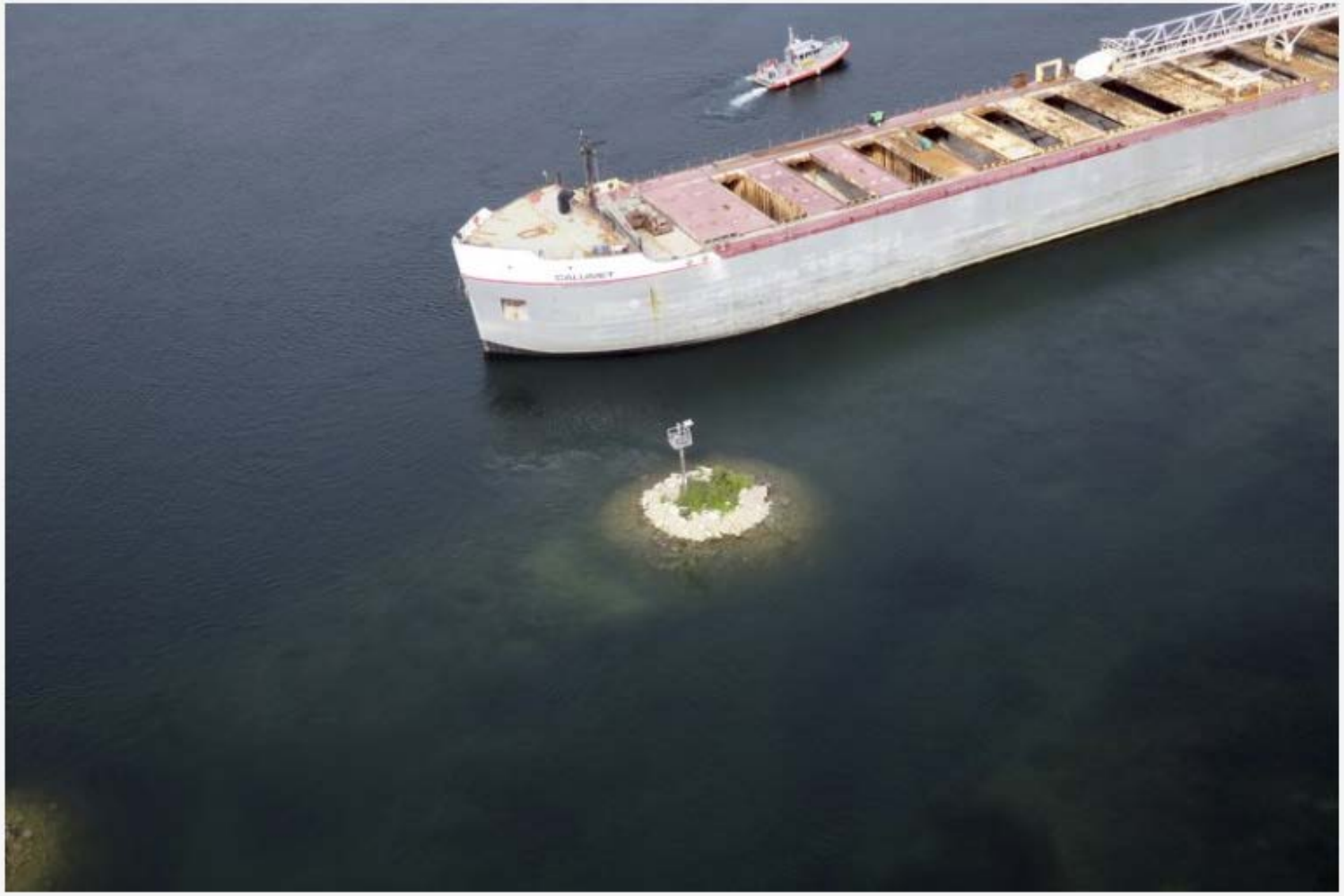
January 22, 2020

M14

843,444 gallons of crude oil was released

Freighter aground in river linking lakes Superior, Huron

August 10, 2017

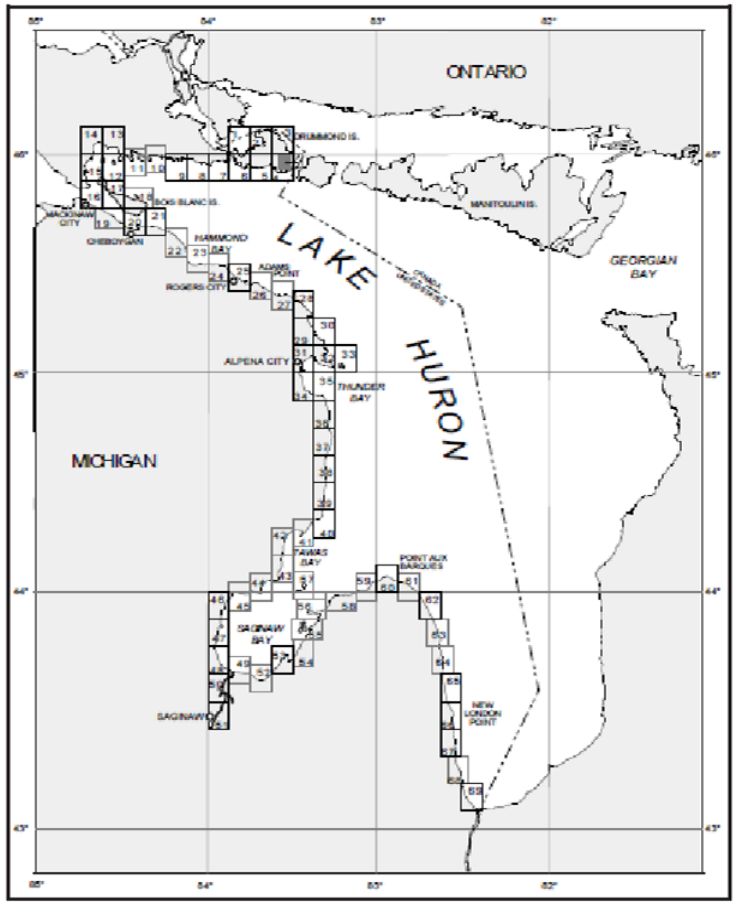


Potential release of 105,000 gallons of #2 diesel

How would you know what might be at risk?

Nicolle Rutherford
Office of Response and Restoration
Emergency Response Division

Sensitivity of Coastal Environments and Wildlife to Spilled Oil
LAKE HURON



Prepared for:

HAZARDOUS MATERIALS RESPONSE and ASSESSMENT DIVISION
National Oceanic and Atmospheric Administration
Seattle, Washington

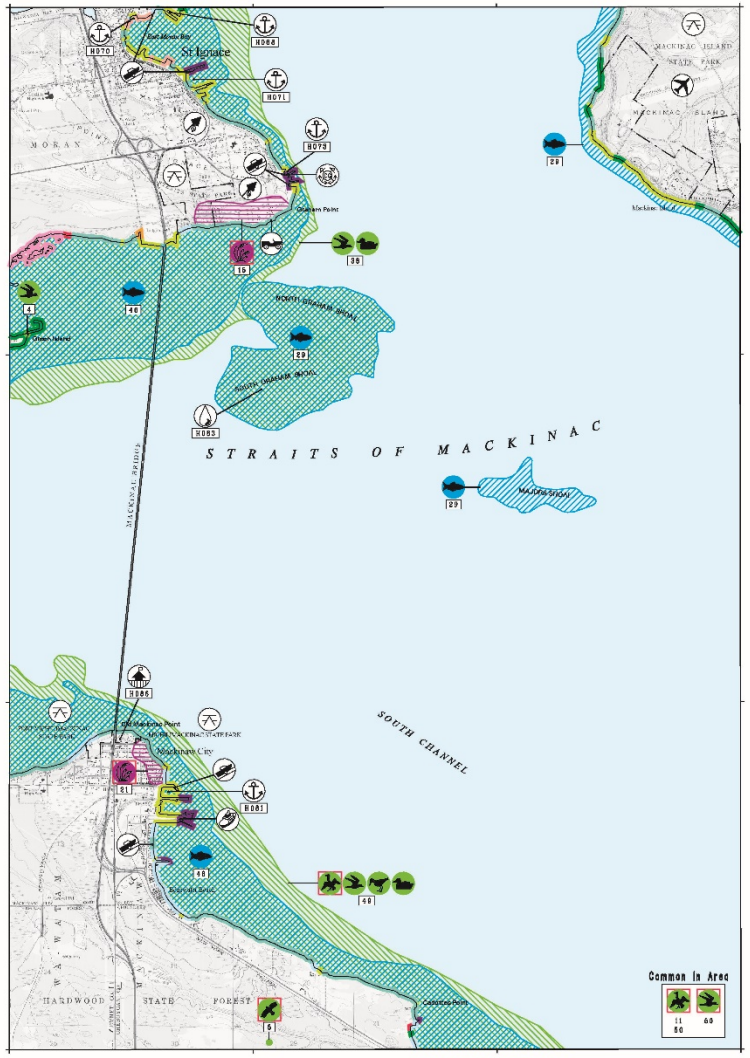
NINTH COAST GUARD DISTRICT
U. S. Coast Guard
Cleveland, Ohio

Prepared by:

RESEARCH PLANNING, INC.
Columbia, SC

SEPTEMBER 1994

ENVIRONMENTAL SENSITIVITY INDEX MAP



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NOAA HMRAD and USCG 9TH DISTRICT
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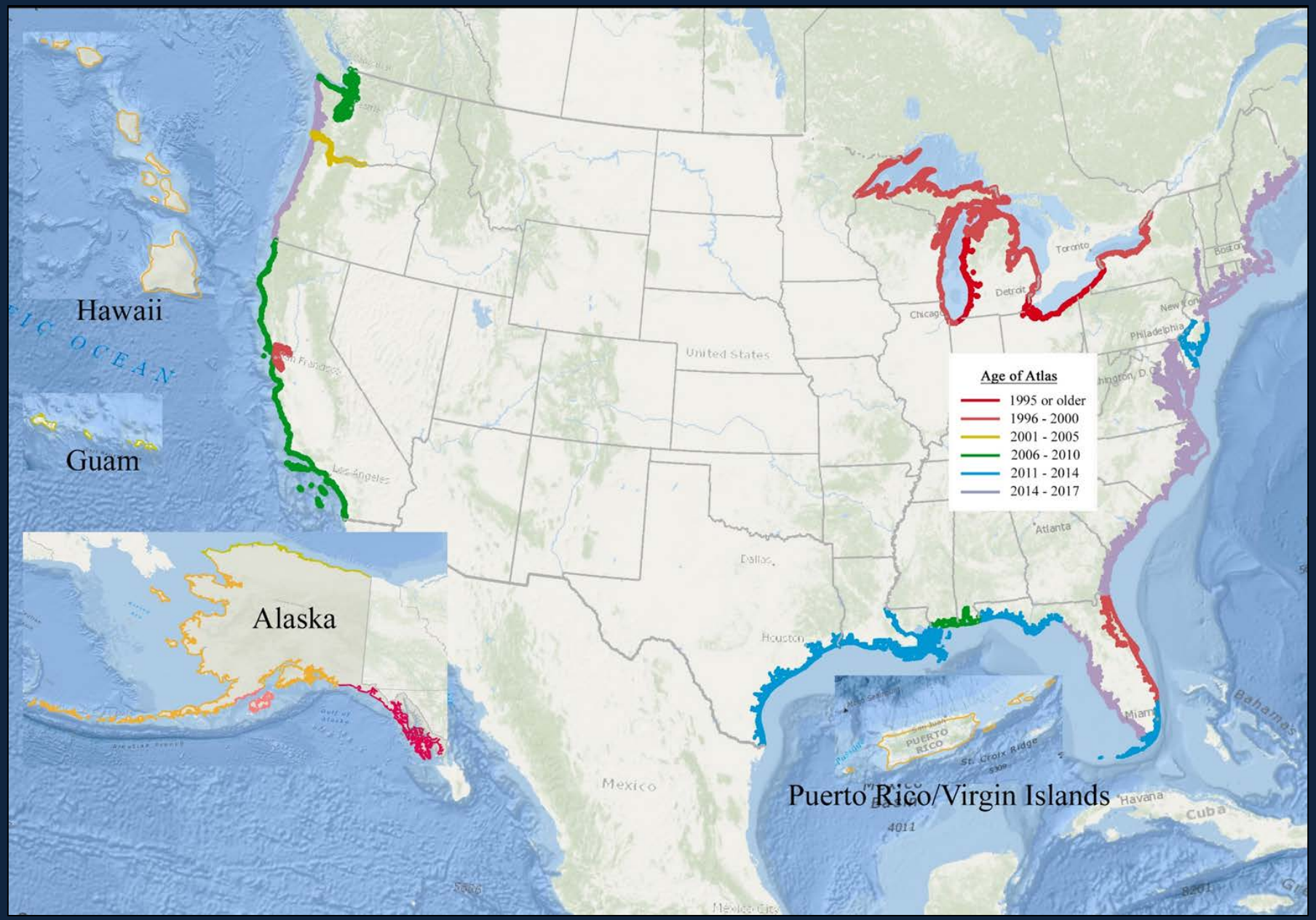
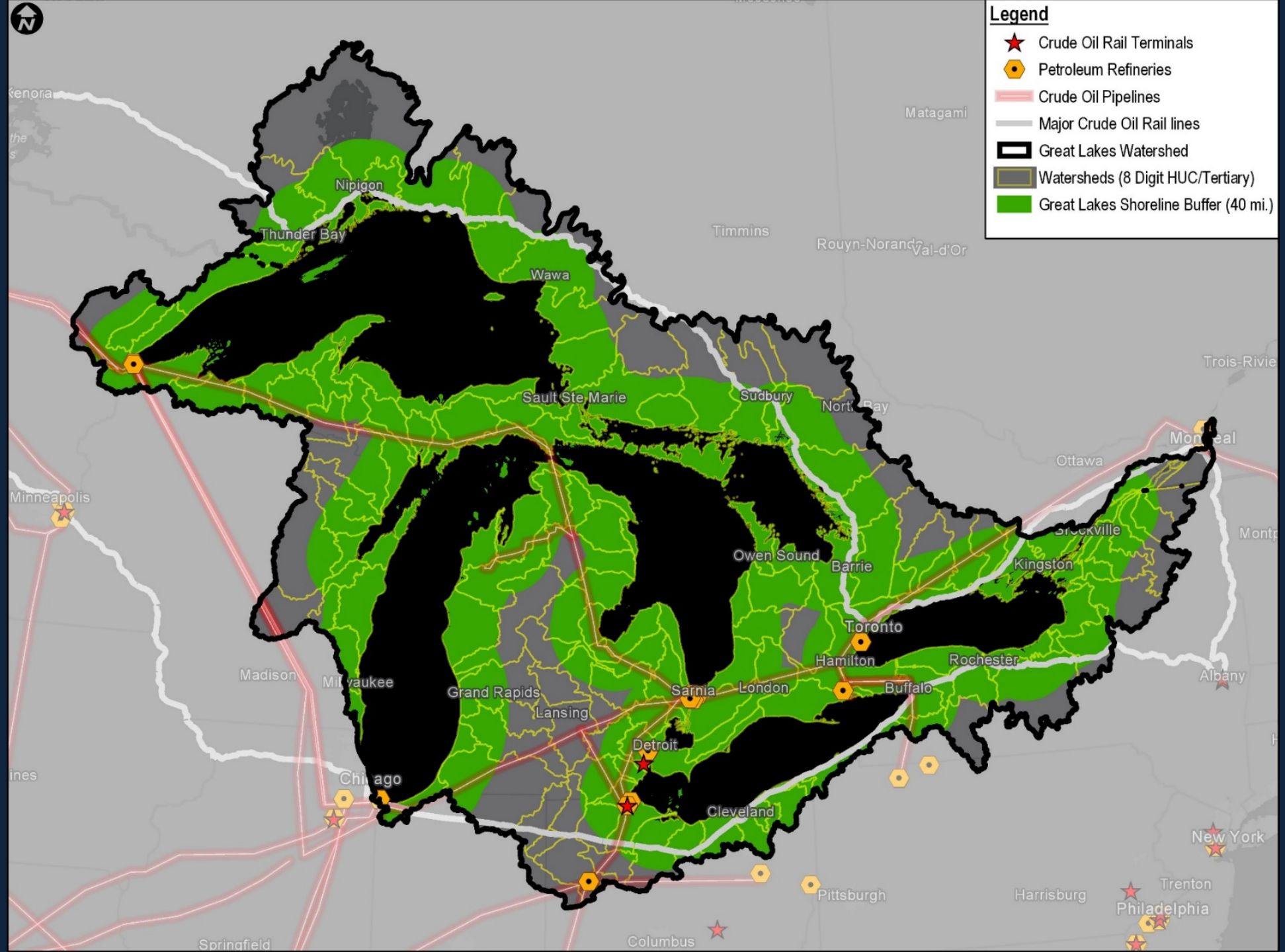
ST. IGNACE, MICH. (1976)

LH-16


Hawaii
Guam
Alaska
Puerto Rico/Virgin Islands
Age of Atlas
1995 or older
1996 - 2000
2001 - 2005
2006 - 2010
2011 - 2014
2014 - 2017
United States
Mexico
Toronto
Detroit
Chicago
Philadelphia
Atlanta
Dallas
Houston
Miami
Havana
Cuba
Bahamas
Los Angeles
San Francisco
PUERTO RICO
St. Croix Ridge


Legend
Crude Oil Rail Terminals
Petroleum Refineries
Crude Oil Pipelines
Major Crude Oil Rail lines
Great Lakes Watershed
Watersheds (8 Digit HUC/Tertiary)
Great Lakes Shoreline Buffer (40 mi.)
Matagami
Nipigon
Thunder Bay
Timmins
Rouyn-Noranda
Val-d'Or
Wawa
Sault Ste Marie
Sudbury
Ottawa
Minneapolis
Owen Sound
Barrie
Kingston
Toronto
Hamilton
Rochester
Madison
Grand Rapids
Sarnia
London
Buffalo
Albany
Lansing
Detroit
Cleveland
New York
Pittsburgh
Harrisburg
Trenton
Philadelphia
Columbus

Great Lakes
RESTORATION

USGS
science for a changing world

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

GLERL
Great Lakes Environmental Research Laboratory

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Grand Traverse Band of Ottawa and Chippewa Indians
Established
1980

CHIPPEWA-OTTAWA

BAY MILLS INDIAN COMMUNITY
GNOOZHEKAANING

DEPARTMENT OF NATURAL RESOURCES
DNR
MICHIGAN

OHIO DEPARTMENT OF NATURAL RESOURCES

UNIVERSITY OF MICHIGAN

GLAHF
Great Lakes Aquatic Habitat Framework

MICHIGAN STATE UNIVERSITY

Michigan Tech Research Institute

Michigan Natural Features Inventory
Discover. Define. Deliver.

DETROIT ZOO

DETROIT ZOOLOGICAL SOCIETY

MICHIGAN SOCIETY OF HERPETOLOGISTS

Audubon

GREAT LAKES

MSRW

Mackinac Straits Raptor Watch

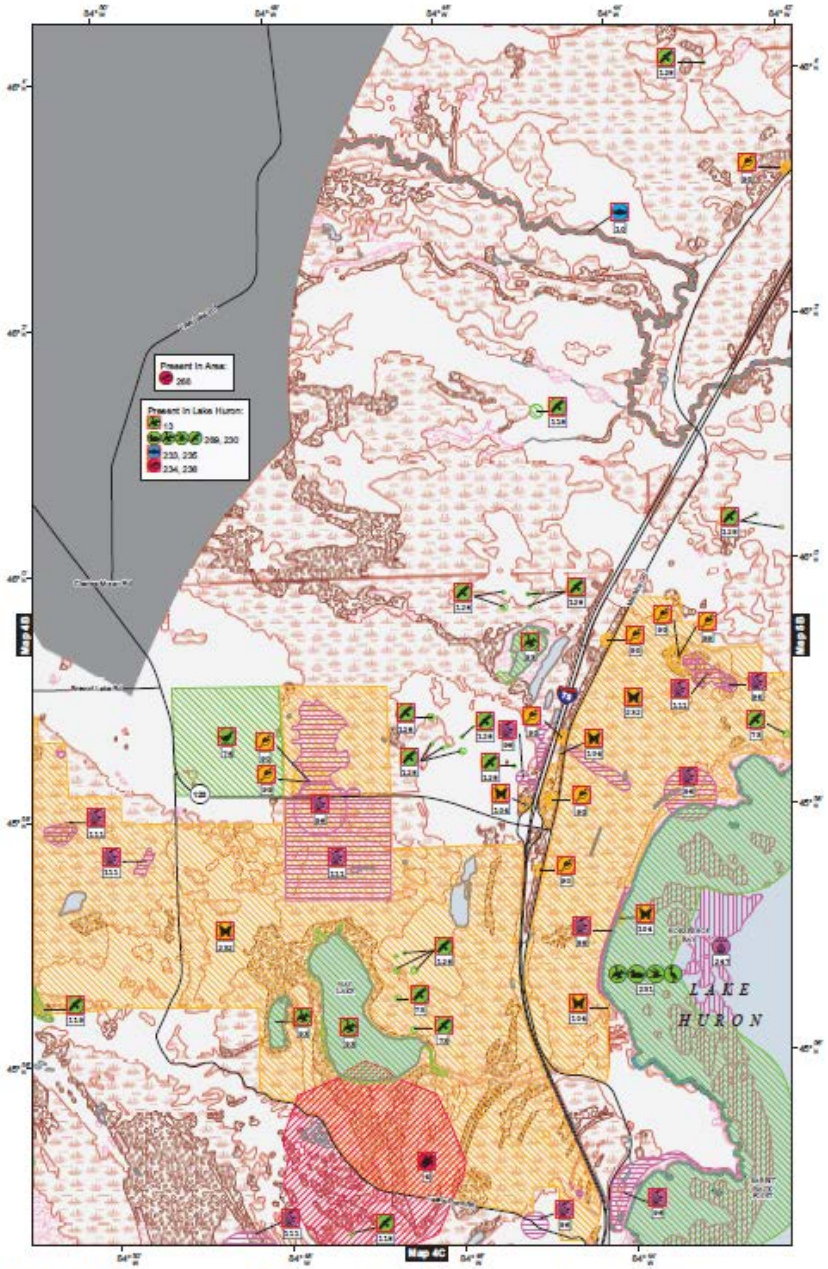
HERPETOLOGICAL RESOURCE & MANAGEMENT

Common Coast

Download ESI Maps and GIS Data

On this page, you can download free Environmental Sensitivity Index (ESI) maps and data in a variety of formats:

- **PDF** (Portable Document Format) files.
- **Geodatabase** format with an ArcMap map document (.mxd). (The date following each geodatabase link shows when modifications were made to the data tables and/or map document only. The underlying data were collected circa the atlas publication date shown in bold.) This is the only GIS format that is modified after the original data publication. We've developed several **ESI Tools** to help you work with the geodatabase files.
- **Metadata** is provided for all ESI data distributed in a GIS format. Available formats vary based on the date of publication. InPort is the current NOAA metadata repository, and newer metadata is only available in this format. In cases where metadata is provided in other formats, it may contain some additional information that did not get transferred to InPort.



Map 4A

Straits of Mackinac

SEE BACK OF MAP
for details about mapped species and other species that occur in mapped area.
Data Published: October 2019

0 Not for Navigation 1 Miles
0 1 Kilometers

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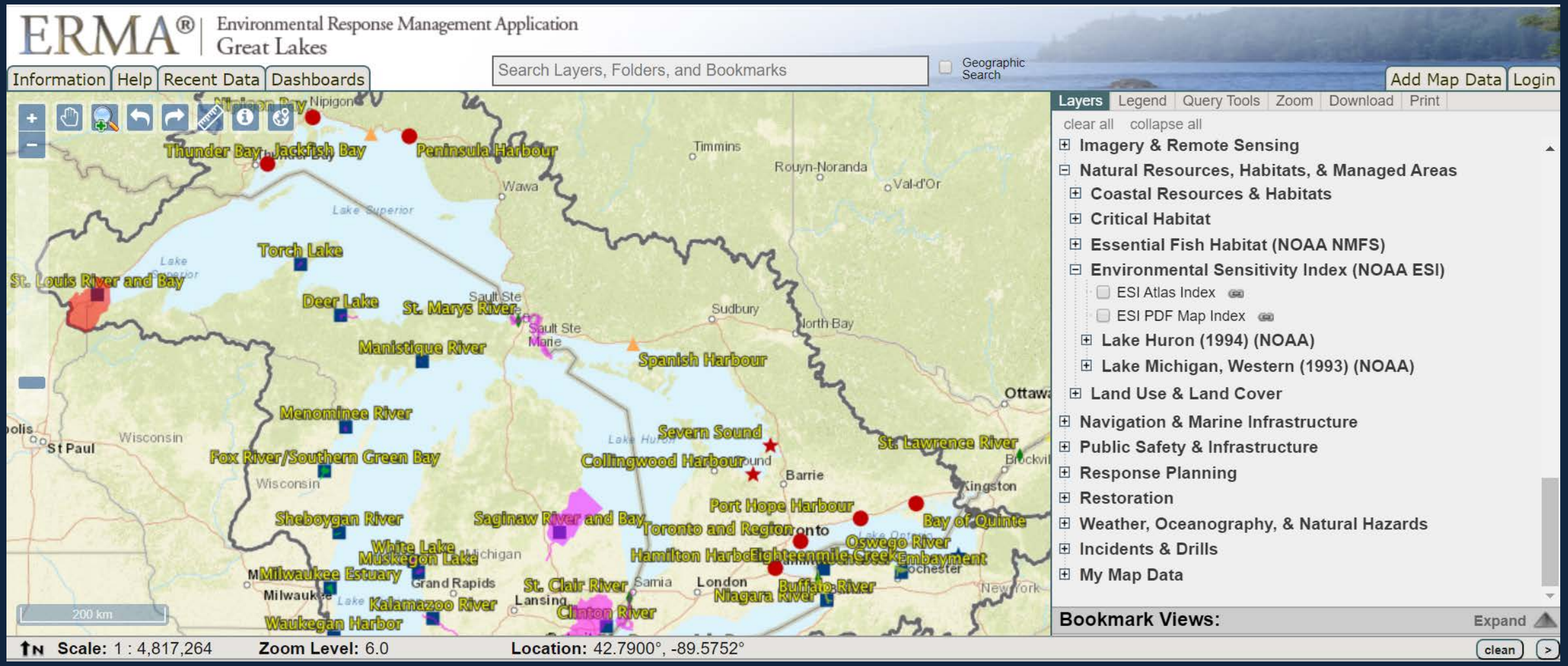
ERMA®
Environmental Response Management Application
Great Lakes
Information
Help
Recent Data
Dashboards
Search Layers, Folders, and Bookmarks
Geographic Search
Add Map Data
Login
Layers
Legend
Query Tools
Zoom
Download
Print
clear all
collapse all
Imagery & Remote Sensing
Natural Resources, Habitats, & Managed Areas
Coastal Resources & Habitats
Critical Habitat
Essential Fish Habitat (NOAA NMFS)
Environmental Sensitivity Index (NOAA ESI)
ESI Atlas Index
ESI PDF Map Index
Lake Huron (1994) (NOAA)
Lake Michigan, Western (1993) (NOAA)
Land Use & Land Cover
Navigation & Marine Infrastructure
Public Safety & Infrastructure
Response Planning
Restoration
Weather, Oceanography, & Natural Hazards
Incidents & Drills
My Map Data
Bookmark Views:
Expand
Nipigon Bay
Nipigon
Thunder Bay
Jackfish Bay
Peninsula Harbour
Timmins
Rouyn-Noranda
Val-d'Or
Wawa
Lake Superior
Torch Lake
St. Louis River and Bay
Deer Lake
St. Marys River
Sault Ste Marie
Sudbury
North Bay
Manistique River
Spanish Harbour
Ottawa
Menominee River
Wisconsin
St Paul
Fox River/Southern Green Bay
Severn Sound
Collingwood Harbour
Barrie
St. Lawrence River
Kingston
Port Hope Harbour
Bay of Quinte
Sheboygan River
Saginaw River and Bay
Toronto and Region
Oswego River
White Lake
Muskegon Lake
Michigan
Hamilton Harbor
Eighteenmile Creek
Embayment
Milwaukee Estuary
Grand Rapids
St. Clair River
Sarnia
London
Buffalo River
Niagara River
Milwaukee
Kalamazoo River
Lansing
Clinton River
Waukegan Harbor
200 km
N
Scale: 1 : 4,817,264
Zoom Level: 6.0
Location: 42.7900°, -89.5752°
clean

What would you protect?

https://response.restoration.noaa.gov/download-esi-maps-and-gis-data

Habitat and Species Q&A

Project	Presenter
Habitat Restoration through NOAA's Restoration Center - Restoring Habitat for Fisheries Beyond AOCs	Terry Heatlie, NMFS Restoration Center
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